

AMENDMENT TO THE CLAIMS

CLAIMS 1-40 (cancel)

CLAIM 41 (new)

41. In a mobile cellular switching network, a method of establishing a cellular call from a cellular station comprising the steps of:

signaling a request for service comprising an identification of a destination station, over a control channel between said cellular station and a base station;

if a serving mobile switching center detects that a radio traffic channel between said mobile station and any base station is available, establishing a connection to the base station having said available channel over the available radio traffic channel;

if said serving mobile switching center detects that no radio traffic channel is available between said mobile station and any base station, allowing said mobile station to go on-hook and disconnecting the control channel while the network waits for a radio traffic channel between said mobile station and any base station to become available;

when a radio traffic channel becomes available, calling said mobile station back; and

when the mobile station goes off-hook, establishing a connection over the available radio traffic channel.

CLAIM 42 (new)

42. The method of claim 41, wherein prior to said mobile station going on-hook, said serving mobile switching center determines whether an expected wait time for an available channel exceeds a first threshold; and

disconnecting said control channel only for those cases in which the expected wait time exceeds said first threshold.

CLAIM 43 (new)

43. The method of claim 41, further comprising the steps of:

prior to calling said mobile station back, testing whether the identified destination station is busy; and

if the identified destination station is busy, avoiding calling said mobile station back.

CLAIM 44 (new)

44. The method of claim 41, further comprising the steps of:

prior to calling said mobile station back, testing whether the identified destination station is busy; and

if the identified destination station is busy, returning a busy signal to the mobile station.

CLAIM 45 (new)

45. The method of claim 41, wherein prior to disconnecting said control channel, the mobile switching center determines whether an expected wait time for an available radio traffic channel exceeds a first threshold;

if the expected wait time for an available radio traffic channel exceeds said first threshold, offering to call back said mobile station;

if the expected wait time does not exceed said first threshold, waiting until the lapse of time of a second threshold, said second threshold smaller than said first threshold;

if a radio traffic channel becomes available before a lapse of time of said second threshold, when the mobile station goes off-hook, establishing a connection over said available radio traffic channel;

if no channel becomes available during the lapse of time of the second threshold, offering to call back said mobile station.

CLAIM 46 (new)

46. The method of claim 41, wherein the step of calling back the mobile station comprises the step of:

calling back the mobile station using a distinctive ringing signal.

CLAIM 47 (new)

47. The method of claim 41, wherein a service of calling back said mobile station is offered only to mobile stations subscribing to said service.

CLAIM 48 (new)

48. The method of claim 47, wherein mobile station subscribers to said service are provided with a default treatment;

wherein the default treatment is one of automatic call-back service and no call-back service.

CLAIM 49 (new)

49. The method of claim 41, wherein if said mobile station originates a new call while waiting for a call back, a call back feature is canceled for this call.

CLAIM 50 (new)

50. The method of claim 41, further comprising the steps of:

retaining a call record comprising said identification of said station of said terminating party during an interval between a time that the mobile station goes on-hook and a time when the mobile station is called back.

CLAIM 51 (new)

51. In a mobile cellular switching network, apparatus for establishing a cellular call from a mobile station, comprising:

means for transmitting a request for service, comprising an identification of a destination station, over a control channel between said mobile station and a base station;

means, responsive to a serving mobile switching center detecting that a radio traffic channel between said mobile station and any base station is available, for establishing a connection toward said cellular station over the available radio traffic channel;

means, responsive to said serving mobile switching center detecting that no radio traffic channel is available between said mobile station and any base station, for disconnecting said control channel while said mobile station goes on-hook and while the network waits for a radio traffic channel between said mobile station and any base station to become available;

means for calling said mobile station back when a radio traffic channel between said mobile station and any base station becomes available; and

means, responsive to the mobile station going off-hook, for establishing a connection between said mobile station and a base station over the available radio traffic channel.

CLAIM 52 (new)

52. The apparatus of claim 51 wherein:
prior to disconnecting said control channel, said mobile switching system
determining whether an expected wait time for an available channel exceeds a first
threshold; and

said mobile switching center calling back said mobile station only for those cases
in which the expected wait time exceeds said first threshold.

CLAIM 53 (new)

53. The apparatus of claim 51, wherein said means for calling back said mobile
station comprises:

means for determining whether the identified destination station is busy prior to
calling back said mobile station; and

means, responsive to a determination that said identified station of said
terminating party is busy, for avoiding an attempt to establish a connection toward said
identified station.

CLAIM 54 (new)

54. The apparatus of claim 51, wherein said means for calling back said mobile
station comprises:

means for determining whether the identified destination station is busy prior to
calling back said mobile station; and

means, responsive to a determination that said identified destination station is
busy, for returning a busy signal to the mobile station.

CLAIM 55 (new)

55. The apparatus of claim 51:
wherein prior to disconnecting said control channel, said mobile switching center
determines whether an expected wait time for an available radio traffic channel exceeds a
first threshold;

if the expected wait time for an available radio traffic channel exceeds said first
threshold, the mobile switching center offers to call back the mobile station;

if the expected wait time does not exceed a first threshold, the mobile switching center waits until the elapse of time of a second threshold, said second threshold smaller than said first threshold;

if a radio traffic channel becomes available before an elapse of time of said second threshold, when the mobile station goes off-hook, establishing a connection over said available radio traffic channel; and

if no radio traffic channel becomes available prior to an elapse of time of the second threshold, the mobile switching center offers to call back the mobile station.

CLAIM 56 (new)

56. The apparatus of claim 51, wherein said means for calling back said mobile station comprises:

means for calling back the mobile station using a distinctive ringing signal.

CLAIM 57 (new)

57. The apparatus of claim 51, wherein the means for calling back the mobile station is activated only for mobile stations subscribing to a call-back service.

CLAIM 58 (new)

58. The apparatus of claim 57, wherein mobile stations subscribing to said call-back service are provided with a default treatment;

wherein the default treatment is one of automatic call-back service and no call-back service.

CLAIM 59 (new)

59. The apparatus of claim 51, wherein if the mobile station originates a new call while waiting for a call back, a call back feature is canceled for this call.

CLAIM 60 (new)

60. The apparatus of claim 51, wherein said mobile switching center retains a call record during an interval between a time that the mobile station goes on-hook and a time when the mobile station is called back;

wherein said call record comprises a calling and a called number.